

Notice of Allowability

Application No.

10/701,402

Examiner

Rebecca M. Stadler

Applicant(s)

WONG ET AL.

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/03/2006.
2. ☒ The allowed claim(s) is/are 1-4, 14-32, 35, 39-42.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-4, 14-32, 35, and 39-42, drawn to a product and process of making ozonized carbon nanotubes, classified in class 423, subclass 415.1.
- II. Claims 5-13, 33-34, and 36-38, drawn to carbon nanotubes having oxygen moieties, classified in class 423, subclass 447.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are directed to related products. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j). In the instant case, the carbon nanotubes of Group I have an ozonide, while the carbon nanotubes of Group II do not require an ozonide, but merely an oxygen moiety.

Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

During a telephone conversation with Susan Sipos on April 21, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-4, 14-32, 35, and 39-42. Affirmation of this election must be made by applicant in replying to this Office action. Claims 5-13, 33-34, and 36-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

This application is in condition for allowance except for the presence of claims 5-13, 33-34, 36-38 directed to Group II non-elected without traverse. Accordingly, claims 5-13, 33-34, and 36-38 have been cancelled.

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An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Susan Sipos on April 21, 2006.

The application has been amended as follows:

--- Please cancel claims 5-13, 33-34, and 36-38.

--- Please amend claims 2 and 3:

Claim 2. An ozonized carbon nanotube of Claim 1 wherein about 5% to 30% of sidewall carbon atoms have a primary ozonide attached.

Claim 3. An ozonized carbon nanotube of Claim 1 wherein about 3% to 25% of sidewall carbon atoms have a primary ozonide attached.

---Please add claims 43-47:

Claim 43. An ozonized carbon nanotube of Claim 1 wherein about 8% to 30% of sidewall carbon atoms have a primary ozonide attached.

Claim 44. An ozonized carbon nanotube of Claim 1 wherein about 10% to 30% of sidewall carbon atoms have a primary ozonide attached.

Claim 45. An ozonized carbon nanotube of Claim 1 wherein about 12% to 30% of sidewall carbon atoms have a primary ozonide attached.

Claim 46. An ozonized carbon nanotube of Claim 1 wherein about 3% to 20% of sidewall carbon atoms have a primary ozonide attached.

Claim 47. An ozonized carbon nanotube of Claim 1 wherein about 3% to 16% of sidewall carbon atoms have a primary ozonide attached.

The following is an examiner's statement of reasons for allowance:

The closest prior art is "Ozonation of Single-Walled Carbon Nanotubes and their Assemblies on Rigid Self-Assembled Monolayers." This reference teaches ozonation of nanotubes. However, the reference does not disclose primary ozonides on the sidewalls of the carbon nanotubes. Although the reference may suggest ozonides on nanotubes, there is nothing to suggest functionalizing the carbon nanotube *sidewall* with a primary ozonide in the range of 3 to 30%.

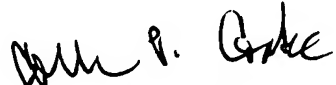
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca M. Stadler whose telephone number is 571-272-5956.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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COLLEEN P. COOKE
PRIMARY EXAMINER